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Outlines of the advanced registry system

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OUTLINES

OF THE

ADVANCED REGISTRY SYSTEM

OF THE

Holstein-Friesian Association

OF AMERICA

AND

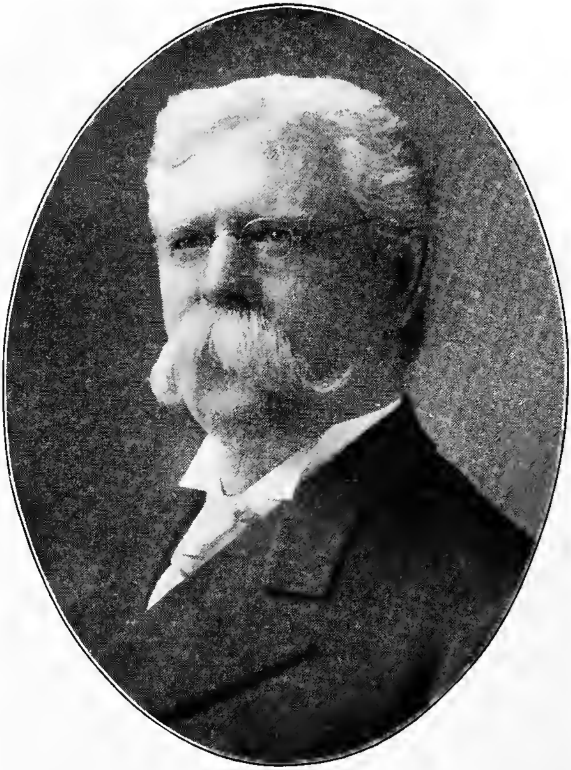
Rules for Officially Authenticated BUTTER FAT TESTS.

WITH INTRODUCTORY ARTICLE ON HOLSTEIN-FRIESIAN CATTLE AND
TABLES SHOWING HIGHEST RECORDS TO DATE.
(ILLUSTRATED.)

THIRD EDITION.

PREPARED FOR
STUDENTS OF AGRICULTURAL SCHOOLS
AND OTHERS INTERESTED.

JANUARY 1, 1908.



MALCOLM H. GARDNER.
Supt. of A. R.

PART FIRST.

INTRODUCTION.

HOLSTEIN-FRIESIAN CATTLE.

By Malcolm H. Gardner, Delavan, Wisconsin, Superintendent Advanced Registry Holstein-Friesian Association of America.

SECTION FIRST.

The cattle known in America as Holstein-Friesians belong to the short-horned, lowland race, native to the low-lying, fertile lands of Europe bordering on the North Sea; of which race, from the dairy standpoint, the Holstein-Friesian family is the most highly developed. These cattle might have been better named Friesian, since Friesland, and the neighboring provinces of Holland, is the central home from which this breed of cattle has been so widely disseminated over the old world, and from which some 10,000 head of foundation stock has been brought to America. The Friesian people are among the most conservative of the Germanic race; still holding to, and speaking among themselves the old Friesian language, although also able to speak Dutch, the official language of Holland. They have been equally conservative in holding to their ancient industry of cattle rearing, an occupation for which their low-lying lands are especially fitted; and, as the Roman historian Tacitus speaks of them nearly 1,900 years ago as cattle breeders, paying a tribute in cattle and hides to the Roman Empire, so we find them today making dairy husbandry their main industry. Holding mainly to one occupation down through the centuries, and passing the business from father to son, it would be strange indeed if their breed of cattle did not reach a very high degree of development; so it is in no way surprising that we should find these Friesian dairymen possessed of a breed of cattle which, as an all-around dairy breed, is superior to any other breed known.

While in character the Holstein-Friesians are essentially a dairy breed and are so regarded in America, yet as an all-around dairy breed the matter of beef and veal must not be lost sight of, and in Holland these are very important points. There, few cattle are allowed to pass their seventh year; but before they pass out of their prime they are fattened and sold as beef. Prof. I. P. Roberts, of Cornell University Agricultural College, in speaking of Holstein-Friesian beef said: "I ate it for three weeks, and the English beef for two; and while not so fat as the shorthorn, it was to my taste superior." The breed reaches full growth and maturity at about five years of age; reaching full height at between two and one-half and three years of age, and each year for the two following years adding about one and three-fourths inches in length, three-fourths of an inch in width of hips, and two inches in girth of chest. Mr. S. Hoxie, former superintendent of Holstein-Friesian Advanced Registry, states that the average measurements of cows upwards of five years of age received to entry in the fourth volume of the Advanced Register were as follows: "Height at shoulders, 51.8 inches; height at hips, 53 inches; length of body, 64.9 inches; length of rump, 21.4 inches; width of hips, 21.9 inches; width at thurl, 19.6 inches; girth at smallest circumference of chest, 75.6 inches." He states that the average weight of these cows was 1,262 pounds, and that the average measurements are those of what might be deemed a typical animal of what is technically known as the milk-and-flesh form of the breed, the form that is most popular in America.

The first association of breeders of these cattle was formed in 1871, the first herd-book being published the following year. The present Holstein-Friesian Association was formed in 1885 by the union of two earlier associations, and is now the largest association of breeders of pure-bred dairy cattle in the world. Frederick L. Houghton, Brattleboro, Vt., has long been the able secretary of the association, and Wing R. Smith, Syracuse, N. Y., its trusted treasurer. Mr. S. Hoxie, the veteran superintendent of Advanced Registry, retired June 7, 1905, on account of age and ill health, at which time he was succeeded by the writer. How many Holstein-Friesian cattle there are now living is unknown; but since the juncture of the two old associations in 1885, to November 1, 1907, 98,937 females and 48,837 males have been recorded. The Holstein-Friesian Advanced Register, based for entry upon individual merit, was established in 1885; since which time eighteen volumes have been published and the nineteenth begun, containing entries of nearly 7,000 cows and 533 bulls. The age of any female is computed as that at the time of last calving or aborting, and the requirements for entry vary with the age; being not less than 7.2 pounds butter fat in seven consecutive days for a heifer calving at just two years of age or younger, and increasing proportionately to not less than 12 pounds butter fat for a cow calving at five years old, there being no increased requirements for increased age after a cow reaches the age of five years. Only bulls having four or more daughters which have been entered in the Advanced Register on official records of butter fat are accepted for entry.

The rules for the entry of cows in the Holstein-Friesian Advanced Register are very stringent, being designed to place every Holstein-Friesian record beyond even a shadow of a doubt. Every milking during the period of test must be watched, weighed, sampled and tested by a representative of some State Agricultural College; and thus, because of resulting expense, the bulk of its records are for short periods, largely for one week. It will be readily admitted that eighteen pounds of butter fat will make twenty-one pounds of the best commercial butter, or an average of three pounds of butter per day when eighteen pounds of fat is produced in seven consecutive days, and that almost no cows other than Holstein-Friesian have ever, under strict rules, produced such an amount. The records of the Holstein-Friesian Advanced Register show that 324 cows have produced officially in excess of eighteen pounds butter fat in seven consecutive days; of which 122 cows have produced between eighteen and nineteen pounds, eighty-three cows between nineteen and twenty pounds, sixty-three cows between twenty and twenty-one pounds, twenty-three cows between twenty-one and twenty-two pounds, sixteen cows between twenty-two and twenty-three pounds, nine cows between twenty-three and twenty-four pounds, three cows between twenty-four and twenty-five pounds, three cows between twenty-five and twenty-six pounds, one cow between twenty-seven and twenty-eight pounds, and one cow over twenty-eight pounds. It must be remembered that while many of these records were made by cows much under five years of age, there were large numbers of records made by two and three-year-old heifers which were, considering age, proportionately as large, yet fell short of the eighteen-pound minimum required for this list.

As to the per cent of fat in average Holstein-Friesian milk, 1,725 cows and heifers of all ages recorded in the eighteenth volume of the Holstein-Friesian Advanced Register, of which more than one-half were heifers, produced in seven consecutive days an average of 382.5 pounds milk containing 13.12 pounds of butter fat, showing an average of 3.43 per cent fat. To November 1, 1907, 119 Holstein-Friesian cows and heifers have produced in excess of twenty pounds of butter fat in a period of seven consecutive days. These 119 animals produced within seven consecutive days a total of 67,314.1 pounds of milk containing 2,554.9 pounds butter fat, showing an average of 3.8 per cent fat. Each animal averaged 565.6 pounds milk containing 21.47 pounds butter fat, equivalent to 80.8 pounds of milk per day, and over twenty-five pounds of the best commercial butter per week. One hundred and twenty-six Holstein-Friesian cows and heifers have made thirty-day official records in excess of seventy-two pounds butter fat, of which thirty-eight produced from seventy-two to seventy-six pounds, thirty from seventy-six to eighty pounds, thirty from eighty to eighty-five pounds, nine from eighty-five to ninety pounds, seven from ninety to ninety-five pounds, six from ninety-five to 100 pounds, four from 100 to 110 pounds, and two over 110 pounds. Fifty-eight Holstein-Friesian cows and heifers have made thirty-day records in excess of eighty pounds butter fat, producing in thirty consecutive days a total of 142,500.2 pounds milk containing 5,084.8 pounds butter fat, and showing an average of

COLANTHA JOHANNA LAD 32481 H.-F. H.-B.

Sire, Sarcastic Lad 194 A. R. S. Dam, Colantha 4th's Johanna 1849 A. R. O.

3.57 per cent fat. The average for each animal was 2,456.9 pounds milk containing 87.67 pounds butter fat, equivalent to 81.9 pounds of milk and 3.4 pounds of butter per day. The magnitude of these averages must be studied to be comprehended and appreciated.

A few Holstein-Friesian cows have been officially tested for longer periods, and one cow produced in sixty days over 208 pounds fat, another in 100 days over 284 pounds, while a heifer under three years of age produced over 227 pounds in the same length of time. At the World's Fair at St. Louis, where three Missouri Holstein-Friesian breeders pitted their individual herd against the pick of the Jersey world, one Holstein-Friesian cow produced over 282 pounds of fat in 120 days, surpassing the foremost Jersey by over two pounds; and since then, a Holstein-Friesian cow has officially produced over 316 pounds fat in the same length of time. One Holstein-Friesian cow has officially produced over 453 pounds of fat in 182½ days, while another, owned by the Michigan Agricultural College, produced over 721 pounds of fat in a period of one year. Many Holstein-Friesian cows have made very lage private records, but it is not the practice of the Holstein-Friesian Association to report private records.

The semi-official yearly test, recently taken up by Holstein-Friesian breeders, is the same as the Jersey yearly official test, and is a much stricter and more reliable test than the Guernsey official yearly test. It consists in making the results obtained from a regular official test of not less than two days in each month of lactation the basis of computation for the average per cent of fat in the milk of the cow for that month, and also in using the results of the regular official test as a check upon the milk production of the cow as reported for the remaining days of that month by the owner. Such tests, while not as absolutely accurate as are official tests, are of great value in determining approximately what a cow can do for her whole period of lactation. At the present writing, the Jersey list in this class of records is headed by Olive Dunn, with 717.5 pounds of butter fat to her credit; the Guernsey list by Yeksa Sunbeam, with 857.15 pounds of fat; while the Holstein-Friesian list is headed by Colantha 4th's Johanna, with 27,432.5 pounds milk containing 998.26 pounds of butter fat. Thus for milk, cheese or butter, either by official or semi-official test, the Holstein-Friesian cow stands at the head of all dairy cows. The Holstein-Friesian Association has but the results of one year's work in the semi-official line to quote from; but, in addition to the work of Colantha 4th's Johanna, mentioned above, one cow produced over 601 pounds fat, two junior four-year-olds 626 and 590 pounds, respectively, two junior three-year-olds 620 and 584 pounds, respectively, and two junior two-year-olds nearly 422 and 406 pounds. Others of various ages have done nearly as well.

It has been asserted by some persons illy posted as to the facts that while Holstein-Friesian cows did yield large quantities of milk, the milk was below standard in quality. Ten gallons of milk per day, by weight eighty-four pounds, might well be considered as an amount so great that no cow could ever produce it; yet under the strictest sort of an official test sixty-three Holstein-Friesian cows have yielded in excess of 588 pounds milk in a period of seven consecutive days. This herd of sixty-three cows, of which some were not of full age, produced in a period of seven consecutive days 39,485.6 pounds milk containing 1,296.65 pounds of butter fat; thus showing an average of 3.28 per cent fat. The average for each cow was 626.7 pounds milk containing 20.58 pounds of butter fat; equivalent to 89.8 pounds milk (over 10½ gallons) per day, and twenty-four pounds of the best commercial butter per week. After such proofs of large production of both butter fat and of milk, and showing that even in the largest yields of almost incredible amounts of milk the average contents of butter fat was ten per cent in excess of the usual legal requirements, further comment would seem unnecessary.

SECTION SECOND.

Owners and breeders of Holstein-Friesian cattle base their claims for the superiority of this breed over all other dairy breeds mainly on the following points: First, that the Holstein-Friesian is a large, strong, vigorous cow, full of energy and abounding in vitality; second, that her physical organization and digestive capacity is such that she is able to turn to the best advantage the roughage of the farm, converting the same into merchantable products; third, that she yields large quantities of most excellent milk, fit for any and all uses and especially well fitted for shipping purposes; fourth, that heredity is so firmly established through her long lineage that she is able to perpetuate herself through the production of strong, healthy calves; and fifth, that when for any reason her usefulness in the dairy is at an end, she fattens readily and makes excellent beef.

While men usually engage in the dairy industry for the profits directly and indirectly to be obtained, and not for the health's sake or for the pleasure therein, yet the aesthetic side of any business should not be lost sight of; for in the breeding of Holstein-Friesians all of these objects may be attained, the owner deriving such pleasure and satisfaction from the ownership of fine animals as can in no way be measured in money.

It is a self-evident fact that the Holstein-Friesian is a large, strong, vigorous cow, and needs no demonstration; but many persons have never stopped to consider the value of this vigor and vitality in a cow. Would a man select a small, weak, puny human nurse for his infant child? And if he should so do, would he expect the child to thrive and grow strong and vigorous on her milk? But in what respect does the need for vitality in the cow differ from like need in the human nurse; is she not the widely chosen foster-mother of the human race? How careful, then, should we be in the selection of this foster-mother.

Nature looks keenly to the welfare of her children; and it is incontrovertible that she has seen to it that the milk of the human mother is such as is best fitted for the human race. By analogy, then, that breed of dairy cattle which produced milk nearest in its consistent parts to human milk produces milk best fitted for the consumption of man; while a milk illy balanced as to fat content, as compared with human milk, is unsuited to the best development of mankind. Of all the dairy breeds, the milk of the Holstein-Friesian most nearly approaches that of the human mother, and it is therefore especially fitted for the use of infants, children and invalids, giving health and strength to all. As human milk is not high in average per cent of fat, so Holstein-Friesian milk, in approaching it, does not as a rule contain as high a percentage of fat as does the milk of some of the smaller dairy breeds which yield milk in very limited amounts, but owing to the very large average quantity of milk yielded by it, no breed equals the Holstein-Friesian in production of butter fat.

It has been stated by some who have not well considered the matter, that the value of milk is measured by its fat content; but this is only partially true even in butter making. From a nutritive standpoint, the fat is the least valuable part of milk; it is the solids not fat that give it is value. The milk of the females of the horse and ass, herbivorous animals whose muscular development is of prime importance, is very low in per cent of fat; yet the health, strength and activity of their progeny is noted. Swine are universally known to have the strongest of digestive powers in the utilization of all food; yet the experiments at the Connecticut Experiment Station show that even the pig can not thrive on milk containing an excess of fat. Holstein-Friesian calves that are suckled by their dams thrive amazingly, and it may be safely assumed as a fact that the milk of any dairy breed which can not safely be fed to the young calf is not suited for human consumption.

COLANTHA 4TH'S JOHANNA 1849 A. R. O.

Official Records: Seven-day, 651.7 pounds milk, 28.176 pounds fat; thirty-day, 2,873.6 pounds milk, 110.833 pounds fat; sixty-day, 5,326.7 pounds milk, 208.398 lbs. fat; seven-day record begun not less than eight months after calving (339 days), 478.6 pounds milk, 17.276 pounds fat. Semi-Official Yearly Record: 365-day, 27,432.5 pounds milk, 998.26 pounds fat.

The globubes of fat suspended in the milk serum of the Holstein-Friesian cow are small, and do not as readily separate and rise as cream as do the fat globules of the milk of some other dairy breeds, thus making Holstein-Friesian milk ideal for consumption as whole milk and for shipping purposes; while, as the modern centrifugal separator will readily extract the fat from any and all milk, it is in no way inferior for cream selling and butter making. Also, if for any reasons it be necessary to increase the per cent of fat in the milk, in order to reach any standard thoughtlessly required by the laws of the state, milk may be standardized to any per cent of fat by the use of any separator.

Owing to her large frame, her vigor and digestive powers, the Holstein-Friesian cow is unequalled in the ability to convert farm roughage into money value, and she belongs to that class of large cows which the Wisconsin Experiment Station found, after years of experience, to be the most profitable for the dairy farmer. She is of hardy constitution, not readily susceptible to tuberculosis and other bovine diseases, and will thrive under adverse circumstances to which a smaller, weaker breed would succumb. Her calves come strong and vigorous at birth, often weighing in excess of 100 pounds, and, owing to the milk being especially fitted for making the best animal growth, make the best and most profitable veal. It is the special function of the Holstein-Friesian cow to produce milk, and while in milk she can not be readily fattened as she devotes all her surplus food to profitable milk production, yet when dry her great assimilative powers are still available, and enable her to take on flesh rapidly, and so make excellent beef.

The time is fast approaching when even the Western farmer can not afford to keep a cow mainly for the calf which she produces, as in such case the handicap against beef production is too great. When a calf takes practically all the milk its dam yields, it starts out in life with a mortgage upon it to the value of the cost of keep of its dam for one year, and this debt, as well as the cost of raising, must be repaid out of the selling price before there can be any true profit in the beef. If the owner of such cows plan to milk them, run the milk through a separator, sell the butter fat to a creamery and feed the skim milk to the calves, he introduces the labor factor and finds himself a full-fledged farmer-dairyman, with all the labor incident to dairying, and cows that will hardly yield enough to pay for the extra work. Over and above all labor and the cost of keep, the average Holstein-Friesian cow will show a nice profit on the butter fat she produces, while the skim milk will not only rear her own calf, but a couple of litters of pigs besides.

An ideal beef form has been created in the mind of the public, and a false prejudice engendered against anything that does not agree in form with that ideal. At present this unjust prejudice militates against the dairy bred steer on the hoof, even though he be as well reared as the beef steer, although when it comes to the final show down at the block the difference between the two is not great. Rear a Holstein-Friesian steer as a shorthorn is reared, and he will indeed be an expert judge who can distinguish the beef when it is placed before him at the table; while repeated tests at the block have proved that the percentage of choice cuts is nearly as large in the one case as in the other. As an all-around breed, and the one approaching the nearest to the long desired dual purpose animal, the Holstein-Friesian is unsurpassed.

Aside from the aesthetic point of view, the personal satisfaction one gets out of the possession of fine stock, there is decided financial advantage in the breeding of pure-bred Holstein-Friesian stock. It costs little more to keep than does common or grade stock, and the returns on the labor invested and the food consumed are so much greater in proportion that there is no comparison. By the use of a good, pure-bred Holstein-Friesian bull, and the rearing of his heifer calves from common or grade cows, one may be reasonably sure that the calves so reared will so far surpass their dams in productive capacity that the excess will many times reimburse their owner for the cost of their sire, to say nothing of the increased selling value of the cows themselves. But by the use of pure-bred Holstein-Friesian dams also, the danger of failure in producing a fine dairy animal almost vanishes, and one may be nearly certain that every female dropped will not only prove valuable in the dairy, but that she will also prove valuable as a producer of pure-bred dairy stock of both sexes. For, aside from the milk product, there are two other sources of income in the pure-bred Holstein-Friesian dairy,—one from the bull calves, the other from the surplus female stock. There is a constant demand for good pure-bred Holstein-Friesian bulls for the improvement of the common dairy herds of the country by grading, and for the further improvement of grade herds by higher grading; while anything especially good is sought by the breeders of pure-bred stock. The less valuable surplus females find a welcome place with the farmer-dairyman, the more valuable as foundation stock for new pure-bred herds, while the best are eagerly sought by established breeders to strengthen their breeding herds.

The system of Advanced Registry devised and established by the Holstein-Friesian Association places all breeders on a par, rendering it very easy for any breeder to establish the value of a pure-bred cow, just as the mile track will establish the value of a trotting-bred horse, and the expense is very moderate. The association not only charges nothing for the entry of such cow and her record in the Advanced Register, but to encourage the breeder in that direction it pays out every year large sums of money in prizes, the chance for the winning of a prize being open to every owner of a Holstein-Friesian cow. Neither do the State Agricultural Colleges make any charge for their oversight in the matter of making these records, their only charge being for the time and necessary expenses of their supervisor sent out to oversee the testing, and as several cows may be under test at the same time, the expense per animal may be made light. A little over three years ago the Holstein-Friesian Association increased the efficiency of its system by the authorization of official records to be begun not less than eight months after calving, and many breeders are taking advantage of this plan to show the staying qualities of their cattle, the results proving very satisfactory indeed. Prizes are awarded for the best records made in the regular seven-day division, in the thirty-day division, and in the eight-months division, and any breeder may win three prizes in each division, or nine prizes in all.

In a limited article of this kind, it is only possible to touch upon the more salient points of the Holstein-Friesian breed, and I would refer interested readers to the Holstein-Friesian Brown-Book, sent free by Secretary F. L. Houghton, Brattleboro, Vt., for more detailed information.* But, to say nothing of my experience as superintendent of Advanced Registry, from my own individual experience with this grand dairy breed, extending over a period of more than twenty years, during which time I was a breeder of these cattle, I can affirm that, either as an all-around dairy breed or for any specialty in dairying, when the returns from all sources are counted, I know of no breed equal to the Holstein-Friesian; while for veal and the supplying of good, healthy, nutritious milk to cities and villages, there is no breed that can approach it.

*NOTE—Mr. Houghton can at present also furnish those interested with a copy of any of the following circulars and pamphlets free of charge: "Condensed Report of the Twenty-second Annual Meeting of the H.-F. Association of America," "H.-F. Charter and By-Laws for 1907," "Introduction to Volume Eighteen of the H.-F. Advanced Register," "H.-F. Score Card," "Instructions and Rules for Making Official Tests," "Value of a Pure Bred Sire," "What Cows for Dairymen," "Choice of Cow's Milk," "Some Reasons for Preferring the Milk of Holstein-Friesian Cows," "Vitality in Milk," and "The Good Qualities of Skim Milk."

The breed papers are "The Holstein-Friesian Register," and "The Holstein-Friesian World." The former is published by Mr. F. L. Houghton, Brattleboro, Vt.; the latter by Mr. C. G. Bown, Ithaca, N. Y. Mr. Houghton also publishes one volume yearly of the "H.-F. Blue Book," and he is now engaged in the preparation of a second edition of his work on Holstein-Friesian cattle.

PART SECOND.

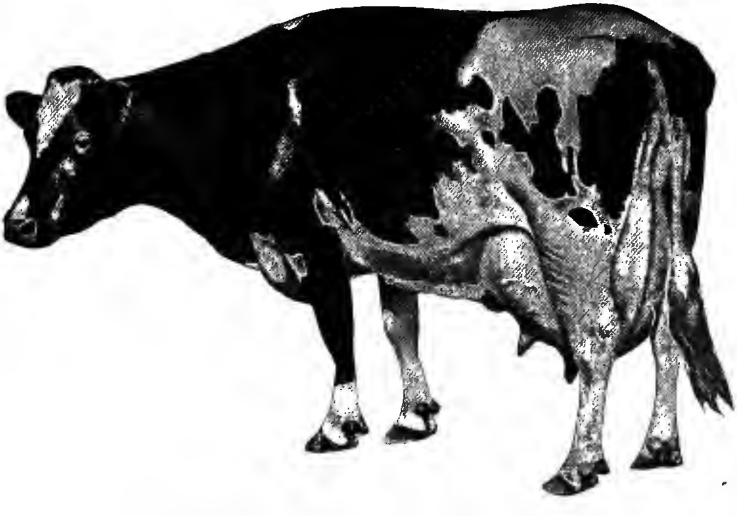
Extracts from Preface to Volume One of the Holstein-Friesian Advanced Register.

What will be its effect upon the general interests of the breed? This naturally will be the first question in regard to this system. The answer as naturally follows: If the publication of milk and butter records in fugitive ways, in the past, has given a worthy reputation to the breed, how much more should the substantiating and gathering together of such records add to that reputation? The records of our grand cows are a common heritage, and no friend of the breed can doubt the utility of gathering and preserving them in some unquestioned form. In this work large and small owners have equal opportunities. In public journals large advertisers take precedence. It would seem that on the ground of common justice some work of this kind is needed to awaken in all breeders equal incentives to improvement, and especially to inspire smaller owners to join in further building up a reputation for the breed in which all shall continue to feel a common pride.

The information gathered by this system in regard to the structure and style of our noted cows must be of value to all who are interested in improving the breed. The means are here afforded of determining models, and of intelligently seeking such combinations of breeding as will produce our ideals in form and structure. Years will add especial value to this part of the work. The time is coming when it will be regarded quite as important to trace peculiarities of structure and peculiarities of qualities in the lines of ancestry as to trace pedigree.

This system is also a slight offering to science. There is yet to be a science of cattle selection and cattle breeding. *But such a science can never be established without a multitude of observations such as this system records.* Finally, it may be said that it is a step in the direction in which all progressive breeders and thinkers upon cattle subjects are looking. It destroys no institution to take its place. It is simply a step forward into an unoccupied field.

S. HOXIE.



AAGGIE CORNUCOPIA PAULINE 1933 A. R. O.

Official Records: Seven-day, 659.2 pounds milk, 27.459 lbs. fat; thirty-day, 2,640.3 pounds milk, 110.093 pounds fat.

HOW ANIMALS ARE QUALIFIED FOR ENTRY

AS SET FORTH IN THE

RULES FOR ADVANCED REGISTRY.

RULE II.

APPOINTMENT OF INSPECTORS AND SUPERVISORS.

BOARD OF OFFICERS APPOINTS INSPECTORS.

The Board of Officers shall appoint one or more persons to be known as Inspectors of Advanced Registry, whose duty it shall be to examine cattle for this registry whenever the Superintendent may require. No person shall supervise tests of, or examine cattle for this registry, over which he has charge or in which he has any pecuniary interest.

STATE AGRICULTURAL COLLEGES APPOINT SUPERVISORS.

The Board of Officers may authorize State Agricultural Colleges and Experiment Stations to appoint properly qualified persons as Supervisors, to conduct the tests of such cows as may be tested for this registry under their authority; but the Superintendent of this Registry may, for cause, reject any such tests or parts of the same. The expenses of making such tests, descriptions and measurements shall in case of tests of cows be paid by the owner of the animal directly to the State Institution appointing the Supervisor, and in cases of inspection to such officer of this Association as the Board of Officers may direct.

The Scale of Points adopted by this Association shall be the standard by which animals to be entered in this registry shall be judged.

RULE III.

CLASSIFICATION OF CATTLE.

For all purposes of this registry, the age of any bull shall be the actual age at time of inspection; and the ages of all cows shall be computed as that at the time of last calving or aborting prior to the beginning of the test, all cows being classified as follows:—

All animals, calving under two and one-half years of age, in a class to be known as the Junior Two-year Form, and numbered as Class 2.

All animals, calving between the ages of two and one-half and three years, in a class to be known as the Senior Two-year Form, and numbered as Class 2½.

All animals, calving between the ages of three and three and one-half years, in a class to be known as the Junior Three-year Form, and numbered as Class 3.

All animals, calving between the ages of three and one-half and four years, in a class to be known as the Senior Three-year Form, and numbered as Class 3½.

All animals, calving between the ages of four and four and one-half years, in a class to be known as the Junior Four-year Form, and numbered as Class 4.

All animals, calving between the ages of four and one-half and five years, in a class to be known as the Senior Four-year Form, and numbered as Class 4½.

All animals calving at or above the age of five years, in a class to be known as the Full Age Form, and numbered as Class 5.

RULE IV.

ELIGIBILITY OF BULLS.

REQUIREMENTS FOR ENTRY AND RE-ENTRY.

A bull to be eligible to Advanced Registry must be the sire of four or more daughters which have been admitted to this registry on officially authenticated butter fat records. Whenever any bull shall have four or more such daughters, the Superintendent of Advanced Registry shall, without formal application, enter such bull in the Advanced Register; and such bull shall be classified as Advanced Registry Standard, which classification shall be indicated by the initial letters A. R. S. The Superintendent shall make a re-entry of any such bull, whenever four or more additional daughters have been admitted to this registry. Any such bull may, if his owner so desire, be examined and described by any regularly appointed Inspector; and, if it meet the requirements, such description may be entered in the Advanced Register at the time of any entry or re-entry of such bull.

REQUIREMENTS FOR ENTRY OF RE-ENTRY WITH DESCRIPTION.

If the entry include description, the following particulars shall be given, namely: name; number in herd book; age at time of examination; general form; description of head, neck, chine, loin and hips, rump, escutcheon, mammary veins, teats, handling; the secretions of the skin; the general vigor; general symmetry, and general style or bearing. Such report may also give accurate measurements of height of shoulders, height of hips, length of body, length from hook bones to point of rump, width of hips at the hock bones, width at the thurl bones, and girth of chest at its smallest circumference; also the condition and weight of the animal, and the date when the weight was taken. Such reports shall be uniformly made, in accordance with the directions and in the use of such terms in their technical meanings as the Scale of Points may prescribe. A bull to be eligible to entry with description must scale at least eighty points of the official Scale of Points, and must weigh not less than 1,800 pounds in live weight.

RULE V.

ELIGIBILITY OF COWS.

Provided she meet certain requirements in butter fat production, hereinafter specified, a cow may be entered in the Advanced Register without examination and description; and only such cows as shall exceed, by not less than 50%, the minimum requirements in butter fat for the age shall be entitled to be entered with description.

If the entry include description, the cow must be examined by a regularly appointed Inspector, and be reported by him as worthy of such entry. In the report the specifications mentioned in Rule IV shall be given; and, in addition thereto, descriptions of udder and quarters of udder. She must scale at least seventy-five points of the official Scale of Points, and be deemed capable of reaching at full age, in milking condition and ordinary flesh, one thousand pounds in live weight.

Only such cows as have made officially authenticated butter fat records, not less in amount than the minimum requirements for the age, as hereinafter specified, shall be eligible to advanced registry; and such cows, when admitted, shall be classified as Advanced Registry Official, which classification shall be indicated by the initial letters A. R. O. All other cows, which may have been admitted to advanced registry on private records made under past rules, shall be classified as Advanced Registry, which classification shall be indicated by the initial letters A. R.

RULE VI.

Butter Fat Records—Requirements for Entry in the Several Forms.

JUNIOR TWO-YEAR FORM.

A cow, calving on or before the day she is two years of age, shall make a record of not less than 7.2 pounds butter-fat in seven consecutive days; and for every day that she may exceed two years of age at date of calving in the Junior Two-year Form, the requirements for the butter-fat record shall be increased .00439 of a pound.

SEGIS AAGGIE DE KOL BEETS 4475 A. R. O.

Official Records: Seven-day, 607.2 pounds milk, 25.645 pounds fat; thirty-day, 2,617.4 pounds milk, 100.215 pounds fat.

SENIOR TWO-YEAR FORM.

If calving on the day she is two and one-half years of age, she shall make a record of not less than 8 pounds butter-fat in seven consecutive days; and for every day that she may exceed two and one-half years of age at date of calving in the Senior Two-year Form, the increased requirements per day shall be the same as in the Junior Two-year Form.

JUNIOR THREE-YEAR FORM.

If calving on the day she is three years of age, she shall make a record of not less than 8.8 pounds butter-fat in seven consecutive days and for every day that she may exceed three years of age at date of calving in the Junior Three-year Form, the increased requirements per day shall be the same as in the preceding forms.

SENIOR THREE-YEAR FORM.

If calving on the day she is three and one-half years of age, she shall make a record of not less than 9.6 pounds butter-fat in seven consecutive days; and for every day that she may exceed three and one-half years of age at date of calving in the Senior Three-year Form, the increased requirements per day shall be the same as in preceding forms.

JUNIOR FOUR-YEAR FORM.

If calving on the day she is four years of age, she shall make a record of not less than 10.4 pounds butter-fat in seven consecutive days; and for every day that she may exceed four years of age at date of calving in the Junior Four-year Form, the increased requirements per day shall be the same as in preceding forms.

SENIOR FOUR-YEAR FORM.

If calving on the day she is four and one-half years of age, she shall make a record of not less than 11.2 pounds butter-fat in seven consecutive days; and for every day that she may exceed four and one-half years of age at date of calving in the Senior Four-year Form, the increased requirements per day shall be the same as in preceding forms.

FULL AGE FORM.

If calving on the day she is five years of age, she shall make a record of not less than 12 pounds butter-fat in seven consecutive days; and no increase in production for increased age at date of calving shall be required for any cow calving in the Full Age Form.

How Official Records Are Made.—Special Rules.

HOW SUPERVISED.

1. Such a record shall be for a period of seven or more consecutive days, and be made under the supervision of an officer or assistant of an Agricultural College or Experiment Station, or by some person whose integrity and ability is vouched for by the Director, Professor of Dairy Husbandry or of Animal Industry, or by such other officer of that institution as shall be placed in charge of tests of dairy cows; and if such record, during any period of seven consecutive days, meet the requirements therefor, it shall be entered in the Advanced Register.

AGRICULTURAL COLLEGES MAY TEST THEIR OWN COWS.

Subject to all the conditions imposed by the Rules of this Association, State Agricultural Colleges may supervise the records made by cows in their own herds; but no record made by any cow owned by such an institution, that is made under the supervision of its own officers, shall be eligible to compete for any prize that may be offered by this Association.

WHEN A TEST MAY BEGIN.

2. At least four days shall elapse, after a cow drops her calf, before an official test shall begin. The calendar day on which the calf is dropped may be counted as the first day, and the record may be begun on the morning of the fifth day following.

THOROUGH IDENTIFICATION OF THE COW.

3. Before the test is started, the cow shall be registered in the Herd Book of the Holstein-Friesian Association of America, or proper application for such registry should have been made. If registered, the Supervisor of the test *shall satisfy* himself that the cow answers the description as to color markings given in the Certificate of Registry, or diagrams of color markings placed thereon. If the color markings of the animal do not agree with those on the Certificate or with the description therein, or for any reason the Certificate of Registry is not at hand for comparison, the Supervisor shall make diagrams of the color markings of the cow, and shall attach the same to his detailed report of her test sent to the Superintendent of Advanced Registry. No such report shall be entered by the Superintendent in the Advanced Register, until such time as the owner of the cow tested shall lay before him a Certificate of Registry agreeing as to color markings with those of the diagrams attached to the report of that cow by the Supervisor of her test.

CONDUCT OF THE TEST.

4. The Supervisor of a test shall see the cow milked dry at its commencement, shall make a note of the exact time at which he pronounced the cow dry, and shall be present thereafter at each milking until the record is completed; and the final milking of the test shall not extend beyond the same time of the day as that at which the cow was pronounced dry. It is recommended that, as a rule, no Supervisor shall, at one time, have charge of more than six cows in test; and under no circumstances may more cows than one undergoing test be milked at the same time. The Supervisor shall determine the weight of each milking and its average per cent of fat separately; making all determinations of fat in duplicate and entering on his report the average of the two determinations so obtained. At the close of the test he shall send to his station a composite test sample, to which each and every milking of the test shall have proportionately contributed, as a check upon his work; and he shall make a detailed report of the test over his signature and affidavit, which report shall be sent to the Superintendent of Advanced Registry as soon as possible, but within thirty days, after the completion of the record.

REPORTING TESTS AND CONCERNING RE-TESTS.

5. Immediately after the completion of any test, the owner, or Supervisor, shall report to the Superintendent of Advanced Registry the name and herd book number of the cow, date of last calving or aborting, age of the cow at that time, and the amount of milk and butter fat of the record. Upon the receipt of this preliminary report, if the Superintendent decides that it is important to have a further test made, he is authorized to provide for a re-test of such length of time as he may deem advisable, and to see that the same is properly conducted; notifying the owner that the cow is to be so tested. If not satisfied with the accuracy of the first test, the Superintendent is authorized to reject it entirely after a

re-test, and the expenses of such re-test shall be borne by the owner of the cow; but if the Superintendent is satisfied of its correctness, the expenses shall be borne by the Association.

AWARDING OF PRIZES.

6. No herd shall be awarded, within any official year, more than three of the classified prizes in any one prize division; these shall be those which will aggregate the largest sum to the owner—prizes in classes for older cows taking precedence.

MAKING RECORDS PUBLIC.

7. The records may be made public at any time by the owner of the cows, by the Superintendent of Advanced Registry or by the Secretary of the Association.

PIETJE 22D 4727 A. R. O.

Official Records: Seven-day, 673.9 pounds milk, 25.295 pounds fat; thirty-day, 2,776.4 pounds milk, 102.700 pounds fat; sixty-day, 4,706.8 pounds milk, 164.659 pounds fat; 120-day, 9,287.5 pounds milk, 316.300 pounds fat; 182½-day (six months), 13,673.9 pounds milk, 453.345 pounds fat.

DECISIONS OF SUPERINTENDENT FINAL.

8. All matters not covered by these rules, as to the making and reporting officially authenticated milk and butter-fat records, shall be directed by the Superintendent of Advanced Registry, and his decision shall be final.

As to the Reporting of Records for Entry.

In the reporting of each record, the name and herd book number of the cow shall be given, the date of her birth, the date of last calving or aborting, the date of commencement of record, the date of close of record, and the number of pounds of milk and butter-fat produced.

Each record shall be sworn to by each and every person assisting in the making of it, including in every case the owner of the cow; and such affidavits shall be in the form prescribed by the Superintendent of Advanced Registry on blanks furnished by him therefor.

RULE VIII.

RE-ENTRY OF COWS MAKING ADDITIONAL RECORDS.—ENTRY OF DEAD COWS.

Any record of milk and butter-fat, made by any cow living or dead, equal to or exceeding the requirements for like ages, may be recorded in the Advanced Register, provided the Rules of the Association have been complied with in the making of such records, and such records be approved by the Superintendent; and if the cow be already entered in this registry, the entry of such additional record shall constitute a re-entry.

RULE IX.

PEDIGREES TO BE ENTERED IN BRACKETED FORM.

In the making of entries in the Advanced Register, pedigrees shall be entered in bracketed form, but shall not extend beyond the third generation; and the names of the ancestors mentioned which have been received to advanced registry, with their numbers and the more important milk and butter fat records of the dams, as determined by the Superintendent, together with the names and herd book numbers of other ancestors mentioned, shall constitute a part of the entry.

A SAMPLE ENTRY.

NO. 6646 A. R. O.* DAISY BURKE DE KOL BEETS 78499.

At 2 y. 5 m. 14 d., 16.176 lbs. butter fat.

SIRE, Paul Beets De Kol 113 A. R. S......	De Kol 2d's Paul De Kol 107 A. R. S. Jessie Beets 1130 A. R. O. At 6 y. 8 m. 20 d., 15.445 lbs. fat.
DAM, Daisy Burke De Kol 3925 A. R. O. At 8 y. 5 m. 28 d., 15.261 lbs. fat.	Nellie Burke 2d's De Kol 23596. Wielinga 2d's Netherland Daisy 43240.

Owned by H. A. Moyer, Syracuse, N. Y. Born Nov. 11, 1904.

Record: Calved April 25, 1907, aged 2 y. 5 m. 14 d.; began record May 5, 1907; 7 days' production 16.176 lbs. butter fat from 406.1 lbs. milk.

Attested by C. B. Dunlop, Cornell Univ. Agl. Exp. Station.

ABBREVIATIONS USED IN ADVANCED REGISTRY.

H.—Holstein Herd Book; D. F.—Dutch Friesian Herd Book; H. F.—Holstein-Friesian Herd Book; A. R.—Advanced Register; A. R. O.—Advanced Registry Official (used for cows having made official records); A. R. S.—Advanced Registry Standard (used for bulls having four or more daughters which have made official records).

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*Last number entered in 18th volume of Advanced Register.

SOME RESULTS ATTAINED

In Official Testing of Holstein-Friesian Cows for Milk and Fat to November 1, 1907.

Twenty-Five Leading Cows in the 30-Day and 7-Day Divisions.

30-DAY RECORDS.

Name and A. R. Number of Cow.		H. B. No.	Age at time of Calving			Pounds of Milk	Av. Per Cent.	Pounds of Butter-fat
Colantha 4th's Johanna	1849	48577	8	1	19	2,873.6	3.86	110.833
Aaggie Cornucopia Pauline	1933	48426	4	11	4	2,640.3	4.17	110.093
Pietje 22d	4727	70884	7	7	18	2,776.4	3.70	102.700
Pontiac Rag Apple	3446	56980	4	8	13	2,574.6	3.93	101.246
Jessie Maida	1686	48805	8	9	11	2,677.3	3.77	100.987
Segis Aaggie De Kol Beets	4475	57416	8	9	2	2,617.4	3.83	100.215
Sadie Vale Concordia	1124	32259	10	2	24	2,752.6	3.59	98.937
Vander Lei Superb 2d	4313	76137	11	2	15	2,852.6	3.42	97.389
Ybma 3d's Pledge Clothilde	2791	51890	7	6	8	2,629.3	3.69	97.073
Duchess Piebe De Kol	2353	52348	7	4	29	2,518.5	3.83	96.469
Alcartra Polkadot	1988	50798	6	11	13	2,605.0	3.69	96.130
Grace Fayne 2d's Homestead	4422	68828	4	0	13	2,334.2	4.09	95.376
A. & G. Inka McKinley	3178	55163	6	5	13	2,685.0	3.52	94.613
Daisy Sindt Mechthilde	2860	53283	7	1	24	2,508.1	3.74	93.896
Blanche Lyons De Kol	4571	60549	5	1	4	2,632.4	3.56	93.825
Pontiac Calypso	3428	61100	5	2	24	2,393.4	3.86	93.336
Pontiac Lunde Hengerveld	3668	51585	5	0	4	2,405.2	3.82	91.857
Aaggie Topsy De Kol	2310	54997	5	10	28	2,200.8	4.14	91.169
Mercena 2d	2607	62122	5	4	24	2,329.5	3.89	90.666
May Hartog Pauline De Kol	1656	45124	4	11	8	2,552.5	3.51	89.637
Winnie Wartena Netherland	2931	37630	10	7	7	2,331.0	3.81	88.709
Lady Ormsby	3714	64352	5	2	4	1,938.0	4.51	87.380
Fay Hengerveld De Kol	4965	60552	5	5	0	2,178.1	4.01	87.243
Beauty Pietertje	4144	53334	5	4	1	2,649.1	3.29	87.025
White Daisy Pietertje	6642	41826	10	7	17	2,410.8	3.57	86.044

7-DAY RECORDS.

Colantha 4th's Johanna	1849	48577	8	1	19	651.7	4.32	28.176
Aaggie Cornucopia Pauline	1933	48426	4	11	4	659.2	4.17	27.459
Segis Aaggie De Kol Beets	4475	57416	8	9	2	607.2	4.22	25.645
Pietje 22d	4727	70884	7	7	18	673.9	3.75	25.295
Pontiac Rag Apple	3446	56980	4	8	13	619.5	4.08	25.294
Jessie Maida	1686	48805	8	9	11	664.7	3.73	24.811
Sadie Vale Concordia	1124	32259	10	2	24	694.3	3.53	24.508
Ybma 3d's Pledge Clothilde	2791	51890	7	6	8	643.9	3.77	24.302
Aaggie Topsy De Kol	2310	54997	5	10	28	545.8	4.32	23.659
Vander Lei Superb 2d	4313	76137	11	2	15	669.8	3.53	23.625
Blanche Lyons De Kol	4571	60549	5	1	4	654.8	3.60	23.566
Duchess Piebe De Kol	2353	52348	7	4	29	648.5	3.63	23.520
Mercedes Julip's Pietertje	2166	39480	6	0	22	584.0	4.02	23.487
May Hartog Pauline De Kol	1656	45124	4	11	8	633.2	3.70	23.417
Changeling	4864	57628	8	6	12	663.9	3.52	23.383
Grace Fayne 2d's Homestead	4422	68828	4	0	13	566.3	4.12	23.329
Alcartra Polkadot	1988	50798	6	11	13	597.1	3.90	23.268
A. & G. Inka McKinley	3178	55163	6	5	13	612.6	3.73	22.880
Pontiac Calypso	3428	61100	5	2	24	560.3	4.06	22.743
Pontiac Lunde Hengerveld	3668	51585	5	0	4	559.8	4.06	22.730
Tidy Abbekerk De Kol	2758	60965	8	4	15	620.6	3.65	22.678
Abby Hartog Clothilde	4143	62154	5	2	1	518.4	4.37	22.663
Daisy Sindt Mechthilde	2860	53283	7	1	24	590.7	3.83	22.631
Lilith Pauline De Kol	1415	43434	4	3	12	653.4	3.46	22.689
De Kol Creamelle	3494	59158	6	2	10	654.3	3.44	22.505

Twenty-Five Leading Holstein-Friesian Cows and Heifers, by Classes, in the 7-Day Division.

FULL AGED COWS. (CLASS 5).

Name and A. R. Number of Cow.		H. B. No.	Age at time of Calving			Pounds of Milk	Av. Per Cent.	Pounds of Butter-fat
Colantha 4th's Johanna	1849	48577	8	1	19	651.7	4.32	28.176
Segis Aaggie De Kol Beets	4475	57416	8	9	2	607.2	4.22	25.645
Pietje 22d	4727	70884	7	7	18	673.9	3.75	25.295
Jessie Maida	1686	48805	8	9	11	664.7	3.73	24.811
Sadie Vale Concordia	1124	32259	10	2	24	694.3	3.53	24.508
Ybma 3d's Pledge Clothilde	2791	51890	7	6	8	643.9	3.77	24.302
Aaggie Topsy De Kol	2310	54997	5	10	28	545.8	4.32	23.659
Vander Lei Superb 2d	4313	76137	11	2	15	669.8	3.53	23.625
Blanche Lyons De Kol	4571	60549	5	1	4	654.8	3.60	23.566
Duchess Piebe De Kol	2353	52348	7	4	29	648.5	3.63	23.520
Mercedes Julip's Pietertje	2166	39480	6	0	22	584.0	4.02	23.487
Changeling	4864	57628	8	6	12	663.9	3.52	23.383
Alcartra Polkadot	1988	50798	6	11	13	597.1	3.90	23.268
A. & G. Inka McKinley	3178	55163	6	5	13	612.6	3.73	22.880
Pontiac Calypso	3428	61100	5	2	24	560.3	4.06	22.743
Pontiac Lunde Hengerveld	3668	51585	5	0	4	559.8	4.06	22.730
Tidy Abbekerk De Kol	2758	60965	8	4	15	620.6	3.65	22.678
Abby Hartog Clothilde	4143	62154	5	2	1	518.4	4.37	22.663
Daisy Sindt Mechthilde	2860	53283	7	1	24	590.7	3.83	22.631
De Kol Creamelle	3494	59158	6	2	10	654.3	3.44	22.505
Segis Inka	1376	36617	9	5	16	578.2	3.88	22.430
Beryl Wayne	1177	32496	8	10	12	608.1	3.67	22.298
Lady Ormsby	3714	64352	5	2	4	424.2	5.25	22.262
Ianthe Jewel Mechthilde	2605	49349	6	0	27	503.0	4.40	22.117
Aaggie Tehee De Kol	5393	52809	6	9	13	545.1	4.06	22.114

SENIOR FOUR-YEAR-OLDS (CLASS 4½).

Aaggie Cornucopia Pauline	1933	48426	4	11	4	659.2	4.17	27.459
Pontiac Rag Apple	3446	56980	4	8	13	619.5	4.08	25.294
May Hartog Pauline De Kol	1656	45124	4	11	8	633.2	3.70	23.417
Aaggie Tehee 3d's Pauline	4511	64004	4	11	20	571.1	3.83	21.892
Pontiac Darkness	4578	65765	4	9	14	523.4	4.03	21.117
Minnie Hark	3338	58274	4	11	21	523.9	3.98	20.826
Milly Netherland De Kol	4584	55680	4	11	22	458.1	4.52	20.723
Jessie Maida	1686	48805	4	8	1	594.1	3.47	20.611
Rowena Maid 2d's B.	2772	50163	4	11	29	547.6	3.74	20.495
Tulip Pietertje Inka De Kol	1881	51819	4	11	22	484.3	4.22	20.441
Winana Pietertje De Kol	1981	50734	4	9	29	576.5	3.54	20.436
Aaltje Salo Erna	3016	53933	4	9	26	566.2	3.58	20.286
Inka Clothilde	1894	50275	4	8	8	526.6	3.84	20.213
De Kol Mechthilde Longfield	3849	53917	4	7	6	493.2	4.09	20.154
Fidessa	2485	43105	4	11	18	570.7	3.51	20.032
Edith Pauline De Kol Korndyke	6473	60485	4	9	15	485.3	4.06	19.727
Aaggie Wing De Kol	2756	58103	4	11	14	484.8	4.07	19.714
Aaggie Topsy De Kol	2310	54997	4	10	20	574.8	3.43	19.701
Quoque Mooie	2943	64023	4	9	2	563.9	3.48	19.621
Belle Empress 4th	4080	55016	4	8	12	434.7	4.47	19.439
Witra 2d	2857	50162	4	9	20	543.0	3.57	19.383
Johanna De Kol 2d	1447	42168	4	10	11	523.7	3.67	19.229
Duchess Aaggie De Kol	2693	52408	4	11	18	482.7	3.98	19.229
Piebe De Kol Beauty	3354	51081	4	8	22	544.1	3.53	19.191
Kirtle S. 2d's Consolation	4698	62685	4	9	14	550.9	3.47	19.089

JUNIOR FOUR-YEAR-OLDS (CLASS 4).

Grace Fayne 2d's Homestead	4422	68828	4	0	13	566.3	4.12	23.329
Lilith Pauline De Kol	1415	43434	4	3	12	653.4	3.46	22.589
Isabella Clothilde Walker	6260	64855	4	3	11	564.0	3.82	21.524
Mercena 2d	2607	62122	4	3	14	554.2	3.80	21.078
Alcartra Polkadot	1988	50798	4	0	24	494.2	4.09	20.222
Bessie Hamilton 2d	4824	75496	4	1	10	472.5	4.23	19.972
Aaggie Grace 2d's Pietertje 2d	3497	54495	4	4	28	580.3	3.43	19.908
Sara Jewel Hengerveld	3036	55841	4	2	25	583.2	3.39	19.792
Pontiac Columbo	3903	61111	4	4	27	491.2	4.02	19.766
Pontiac Artis	3865	61114	4	4	9	533.3	3.68	19.668
Oak De Kol 2d	3797	66793	4	2	4	580.9	3.38	19.655
Pontiac Detry	5674	60618	4	3	16	484.8	3.99	19.332
De Kol 2d's Pauline	1146	30712	4	2	5	443.1	4.36	19.319
Nicolo Wayne De Kol Hartog	5481	65428	4	2	17	505.0	3.84	19.319

JUNIOR FOUR-YEAR-OLDS (CLASS 4).

Name and A. R. Number of Cow.	H. B. No.	Age at time of Calving			Pounds of Milk	Av. Per Cent.	Pounds of Butter-fat
Cleopatra Gelsche 3379	61510	4	3	7	585.1	3.28	19.229
Aaggie Vale 4179	68770	4	1	25	401.2	4.70	18.862
Pontiac Pauline Hesseltje 3665	61109	4	2	18	454.9	4.10	18.662
Johanna Queen Mechthilde 3805	67290	4	5	1	545.9	3.41	18.632
Allie Mona De Kol 5168	62065	4	1	28	524.8	3.54	18.568
Calamity Pietertje De Kol 3996	61633	4	3	26	509.9	3.63	18.530
Daisy Sindt Mechthilde 2860	53283	4	3	6	509.2	3.64	18.519
Segis Inka McKinley 6031	62411	4	3	8	526.4	3.50	18.427
Dora Cornucopia De Kol 4794	64307	4	4	28	523.3	3.51	18.369
Ruby De Kol Burke 4214	65426	4	4	21	526.0	3.49	18.367
Ninetta Butter Girl 4052	66956	4	0	26	451.0	4.06	18.317

SENIOR THREE-YEAR-OLDS (CLASS 3½).

Copia Hengerveld 3d 4688	69396	3	7	21	527.4	4.17	22.012
Aaggie Cornucopia Pauline 1933	48426	3	11	9	599.2	3.66	21.953
Betta Lyons Netherland 4746	69247	3	7	29	599.9	3.52	21.096
Pontiac Rag Apple 3446	56980	3	8	4	558.6	3.76	20.993
A. & G. Burke Segis Inka 4290	65480	3	11	7	519.5	4.02	20.902
Maid Mutual De Kol 3431	60210	3	9	25	588.8	3.46	20.406
Winana Pietertje De Kol 2d 5410	69558	3	9	6	593.3	3.28	19.468
Minnie Hark 3338	58274	3	11	7	450.4	4.30	19.359
May Hartog Pauline De Kol 1656	45124	3	11	21	524.9	3.59	18.830
Pontiac Calypso 3428	61100	3	9	27	413.4	4.55	18.805
De Kol Douglas 2055	50667	3	11	28	480.8	3.90	18.732
Pontiac Soldene 4599	65759	3	10	2	573.1	3.24	18.564
Gracia Ward 2d 3062	58645	3	9	8	551.9	3.34	18.431
Ida Lyons 2d 4451	68516	3	10	5	544.9	3.38	18.411
Rowena Maid 2d's B. 2772	50163	3	10	0	577.7	3.19	18.404
Calamity Spofford 4198	64914	3	11	29	463.3	3.94	18.273
Johanna Hengerveld Pledge 6194	68380	3	10	28	509.9	3.58	18.272
Pontiac Agnes 3960	65756	3	6	21	498.3	3.65	18.198
Pontiac Clothilde 3541	56982	3	6	5	433.7	4.14	17.945
Homestead Cradock De Kol 1999	49460	3	9	23	476.8	3.75	17.881
Aaggie Topsy De Kol 2310	54997	3	9	28	479.0	3.70	17.717
Gracia Ward 2323	49517	3	9	24	508.6	3.47	17.655
Lady Jessie Aaggie De Kol 4265	69209	3	9	26	537.9	3.26	17.532
Susie De Kol Paul 2771	56446	3	6	3	514.6	3.40	17.515
Quoque Clothilde Beets 4429	62395	3	8	25	596.1	2.92	17.415

JUNIOR THREE-YEAR-OLDS (CLASS 3).

Katy Spofford Corona 1738	50663	3	1	6	590.7	3.53	20.822
Pontiac Ambrosia 3666	61103	3	3	4	524.9	3.80	19.972
Lilith Pauline De Kol 1415	43434	3	2	26	569.4	3.44	19.571
Aaggie Grace 2d's Pietertje 2d 3497	54495	3	5	10	573.2	3.40	19.461
Daisy Pietertje Hartog 2d 5098	71501	3	0	14	456.2	4.22	19.250
Blanche Lyons Hengerveld 3829	65285	3	1	9	574.3	3.31	19.008
Aaggie Lily Pietertje Paul 5392	74073	3	3	4	441.1	4.25	18.751
Tidy Pauline De Kol 2d 5343	83916	3	4	12	523.6	3.50	18.345
A. & G. Inka McKinley 3178	55163	3	3	6	514.2	3.56	18.282
Eva De Kol Burke 5075	74101	3	1	12	477.1	3.78	18.018
Daisy De Kol of Whittaker 4111	61257	3	4	18	439.1	4.05	17.768
Pontiac Clothilde De Kol 2d 5279	69991	3	1	7	516.7	3.42	17.680
De Natsey Baker 2505	55471	3	0	9	523.6	3.36	17.615
Mutual Friend 3d 1119	28389	3	2	24	409.2	4.27	17.472
Florence Netherland Pietertje 4804	71955	3	3	23	494.0	3.53	17.429
Pontiac Artis 3865	61114	3	4	20	464.2	3.74	17.340
De Kol Witkop Wayne 2d 2875	58709	3	0	15	390.7	4.44	17.337
Alcartra Polkadot 1988	50798	3	1	6	459.8	3.76	17.280
Mildred Walker 4147	66239	3	4	17	497.9	3.46	17.234
Ophelia Queen Lill De Kol 6153	72110	3	2	9	541.1	3.18	17.216
Lady Castine Colantha 5223	71054	3	0	21	409.8	4.13	16.940
Lilly Belle Walker 3378	61511	3	2	6	485.0	3.46	16.802
Jane De Kol Manor Beets 2984	59625	3	1	6	328.7	5.11	16.795
Janie Netherland De Kol 3553	63981	3	5	29	430.7	3.90	16.795
Calamity Pietertje De Kol 3996	61633	3	4	2	446.2	3.76	16.763

SENIOR TWO-YEAR-OLDS (CLASS 2½).

Name and A. R. Number of Cow.		H. B. No.	Age at time of Calving			Pounds of Milk	Av. Per Cent.	Pounds of Butter-fat
Alta Posch	1882	54867	2	11	28	586.2	3.70	21.661
Aaggie Cornucopia Pauline	1933	48426	2	11	27	566.4	3.45	19.556
Lillian Walker 3d	6578	73170	2	11	22	535.0	3.51	18.757
Juliana De Kol	3073	55792	2	10	24	450.9	4.01	18.079
Edith Prescott Wayne	5429	73709	2	11	10	509.2	3.52	17.923
Veeman Vale	5404	77466	2	9	20	422.1	4.12	17.371
Lilith Ingalis	4962	74369	2	10	22	439.8	3.89	17.123
Creamelle Hengerveld	4949	68261	2	11	0	415.4	4.11	17.081
Canary's Mercedes Brightest	2110	49131	2	11	18	390.0	4.35	16.957
Aaggie Grace Pietertje Princess	5096	75153	2	11	0	429.8	3.94	16.922
Colantha 4th's Sarcastic	4779	71014	2	9	25	516.1	3.27	16.901
Shadeland Plum De Kol	4432	69075	2	11	27	502.4	3.35	16.833
Lady Jessie Aaggie De Kol	4265	69209	2	11	9	370.3	4.53	16.801
Pontiac Clothilde	3541	56982	2	7	11	438.8	3.83	16.796
Josephine Mechthilde Beauty 2d	4702	71401	2	11	16	468.2	3.57	16.692
Johanna De Kol Van Beers	5981	75131	2	8	24	437.1	3.82	16.684
Johanna De Kol Wit 2d	6258	76249	2	9	11	434.0	3.83	16.643
Skylark De Kol Johanna	3095	62231	2	11	19	497.9	3.32	16.514
Plebe Beets	5273	70942	2	10	25	473.4	3.44	16.281
Ruby De Kol Burke	4214	65426	2	6	10	461.4	3.49	16.101
A. & G. Burke Segis Inka	4290	65480	2	9	21	459.1	3.50	16.052
Pontiac Rag Apple	3446	56980	2	7	12	381.4	4.20	16.000
Pontiac Netherland De Kol	3289	56967	2	8	8	441.8	3.55	15.695
Minnie Sandes 2d	1685	49318	2	10	2	480.5	3.23	15.504
Neta Clothilde Perfection	4545	65354	2	11	13	455.5	3.38	15.406

JUNIOR TWO-YEAR-OLDS (CLASS 2).

Name and A. R. Number of Cow.		H. B. No.	Age at time of Calving			Pounds of Milk	Av. Per Cent.	Pounds of Butter-fat
Bessie De Kol Rue 2d	6597	79374	2	4	18	433.4	4.17	18.082
Netherland Johanna Rue 6th	6601	79373	2	4	29	393.6	4.38	17.226
Jasamine Beets	6783	78910	1	11	17	448.2	3.67	16.465
Daisy Burke De Kol Beets	6646	78499	2	5	14	406.1	3.98	16.176
Mary Walker Pietertje	6212	77790	2	2	14	401.7	3.98	16.006
Pontiac Gladi	6828	79904	2	5	9	491.7	3.23	15.869
Prescott Mercedes Julip	5593	73167	2	11	12	483.5	3.27	15.828
Pontiac Columbo	3903	61111	2	5	9	444.4	3.50	15.567
Duchess Ormsby 2d's Heng'veld De K.	2364	53074	2	1	29	348.5	4.36	15.212
Clothilde Fay De Kol	6217	78966	2	4	18	432.2	3.49	15.066
Gertie Lilu Korndyke De Kol	5106	68045	2	2	21	391.0	3.85	15.039
Almeda Luecke 2d	1906	49520	2	4	21	384.7	3.87	14.906
Alma Coin Hengerveld De Kol	6213	78769	2	4	11	376.7	3.95	14.864
Daisy Pietertje Hartog 2d	5098	71501	2	0	13	341.4	4.34	14.822
Jessie Inka Pledge	4072	70177	2	2	0	519.7	2.82	14.643
Copia Hengerveld 3d	4688	69396	2	5	9	391.6	3.74	14.642
Almagelsche Clyde	6582	79888	2	4	23	332.2	4.38	14.562
Pontiac Pietertje Princess	6798	82003	2	2	4	335.0	4.33	14.520
Lady Netherland De Kol Pauline 2d	6309	79053	2	4	22	351.2	4.13	14.499
Pontiac Artis	3865	61114	2	3	20	398.4	3.62	14.412
Pietertje Princess Leo 3d	6379	78153	2	5	26	428.3	3.34	14.305
Genevra Mercedes De Kol	5851	77831	2	3	6	312.6	4.57	14.295
Shadybrook Gerben Parthenea 4th	3735	64125	1	8	13	210.5	6.79	14.291
Ava Colanthus Plebe	3421	61971	2	3	1	338.9	4.19	14.188
Jewel Duchess	3904	64474	2	1	12	371.8	3.80	14.145

PART THIRD.

Instructions for Scaling, Measuring and Describing.

†INSPECTOR'S OUTFIT.

An inspector's outfit consists of a measuring rod and tape, a memorandum book, a pencil, and an erasive rubber. This memorandum book should be about seven inches long, by four wide, and be ruled in the ordinary way across the pages by twenty-six lines. A book of two hundred pages will hold descriptions for ninety-nine animals. An index of the items to be taken will be found in Rule IV, commencing with "Name of Animal." This index should be written on a narrow slip of paper from top to bottom, corresponding with the lines of the book and attached to the first leaf in such a way as to be easily read from any leaf in the book as it is turned down towards it, or it may be written on the front edge of the first leaf, abbreviated so as to occupy a perpendicular space of about an inch in width. The other leaves of the book should then be cut away to the same extent.

ASSISTANTS PROVIDED BY APPLICANTS.

The inspectors should have two assistants. These should be furnished by the owner of the herd. One to hold the animals during examination, the other to assist in measuring, and to write down descriptions as they are given to him. Ordinarily the owner will be pleased to act in the latter capacity, as he should be present to furnish any information that may be required in regard to name, number in herd-book, age, date of service, etc.

METHOD OF DESCRIBING.

Commencing at the top of the index, the name of the animal and number in herd-book is first ascertained. The assistant, acting as clerk, writes these down on the first line extending across the face of book over the width of both pages. On the next line the age is written. If put down in years only it will answer for the purposes of the examination, as in the filling out of applications that follow after the records are completed, the inspector has the date of birth before him and can readily ascertain the exact age to be filled in at that time. Then the inspector describes the general form in one item, the head in two items, the neck in three, the chine in two, the loin and hips in two, the rump in three, the escutcheon in two, the udder in two, the quarters of udder in one, the teats in one, the mammary veins in three, (he also gives their extensions, branches and other peculiar developments), the handling in one item, the secretions of the skin in two, and the general appearance in three, the items of description of each part being written on a single line. This requires interlining in some instances, yet the space is sufficient for all practical purposes.

In most cases descriptions should be limited to the following particulars, which should be quite full, viz:

Age of Animal, General Form, General Vigor, General Symmetry, Particulars of the Mammary Veins and Orifices, Particulars of Handling, *i. e.*, Skin and Hair, and in Cows Particulars of Udder and Teats. The measurements should

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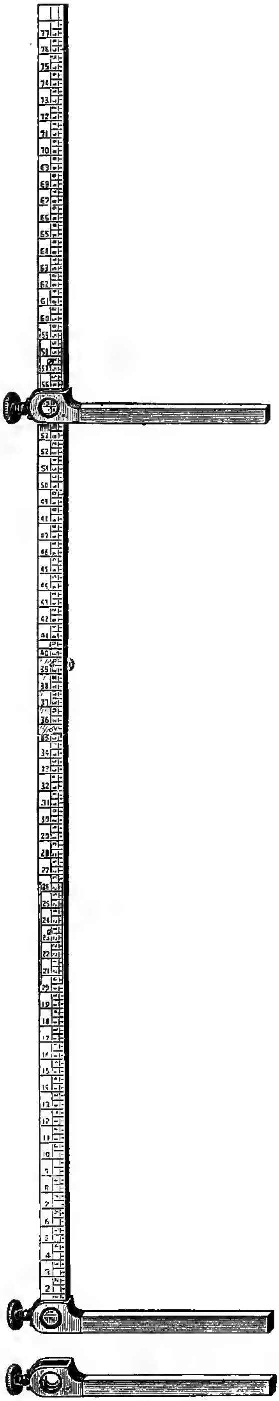
†See form of measuring rod on following page.



MEASURING ROD.

Measuring rods are usually about six feet long and are made of light, strong wood. One side of the upright bar has two columns of ruling in feet, inches, half inches and quarter inches. The inside column, the one from which the arms extend, begins one inch from the lower end, the vacant space being occupied by the thickness of the lower arm which is just one inch. Both arms are set at right angles with the upright bar. The thumb screws hold them firmly or loosen them at the pleasure of the operator. The lower arm is usually held in place while measuring, the upper arm moves up and down and determines the measurements. Heights are read from the outside scale as the lower end of the rod rests on the ground, level with the feet of the animal; widths and lengths from the inside scale as the arms of the measure closely press within them, the extreme points of the dimensions taken. Measurements are evidently of much importance to breeders. It would also seem that they must be invaluable to those who are striving to reach correct conclusions as to the relations of form to function in animal economics.

always be taken, and, when not exceedingly inconvenient, the weight and condition also.

METHOD OF MEASURING.

The animal must be brought to stand on a level place and in a natural position, the feet squarely under the body, the head at a medium height and the neck straight. The two items of height are taken perpendicularly from the ground to the top of the animal, the one immediately over the knee and center of the shoulder, and the other over the hook bone to center of the back; the length of the body is taken from the extreme front of the shoulder point to the extreme rear and highest point of the rump, diagonally in a straight line; the length of the rump, from the extreme front side of the hook bone to the extreme of the rump as described above; the width of hips from the outside of one hook bone to the outside of the other in a straight line; the width of the thurl from the outside of one thurl bone to the outside of the other, also in a straight line; the girth by a tape closely fitting the smallest circumference of the chest. In the latter measurement the tape must be drawn so closely that a slight movement of it will move the skin of the animal. If the head is lowered from the natural position this measurement will invariably be erroneous. And if the neck is turned to the right or left the measurement of length of body will also be erroneous. Then follows the ascertaining of the weight, which must invariably be obtained by reliable scales, the date of service is then ascertained of the owner and condition described. The date of the examination should also be recorded in some convenient place in the memorandum book.

REVIEW OF DESCRIPTIONS AND MEASUREMENTS.

The inspector should then dismiss his assistants and take his memorandum book, pencil and erasive rubber and proceed to review his work. He should pass from animal to animal and look closely to every item of description and measurement. He must take all the time that is necessary to insure just and impartial descriptions. First impressions are more apt to be unfavorable. This review gives him a chance to correct such impressions after getting a general view of the herd. If there is any question in his mind that any animals will not scale the requisite number of points he should now take time to scale them. He can do this quietly and unobtrusively. He should preserve all such work to be reconsidered, as his observations extend to other herds and as he has time to counsel with the superintendent or other inspectors. His decisions need not be made at once. He should take all the time and avail himself of all opportunity for comparison that is needed to make his work perfect.

RESPONSIBILITIES OF INSPECTORS.

An inspector is responsible for the accuracy of all descriptions made by him. He must describe from the standpoint of the association, as shown by the Scale of Points. He must not permit himself to be biased by any views or prejudices he may entertain in regard to the perfection of this scale. He must not permit himself to be influenced by any condition of flesh or lack of flesh, or by grooming or lack of grooming, or by defects caused by age, accident or diseases not hereditary. He must describe according to the method of the association, as laid down in Rule IV, and in the *Nomenclature. No item of description therein required must be left out.* The terms must be used as defined, *but he may use other terms*

Fig. 2.

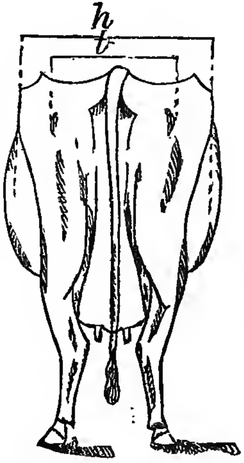


Fig. 1

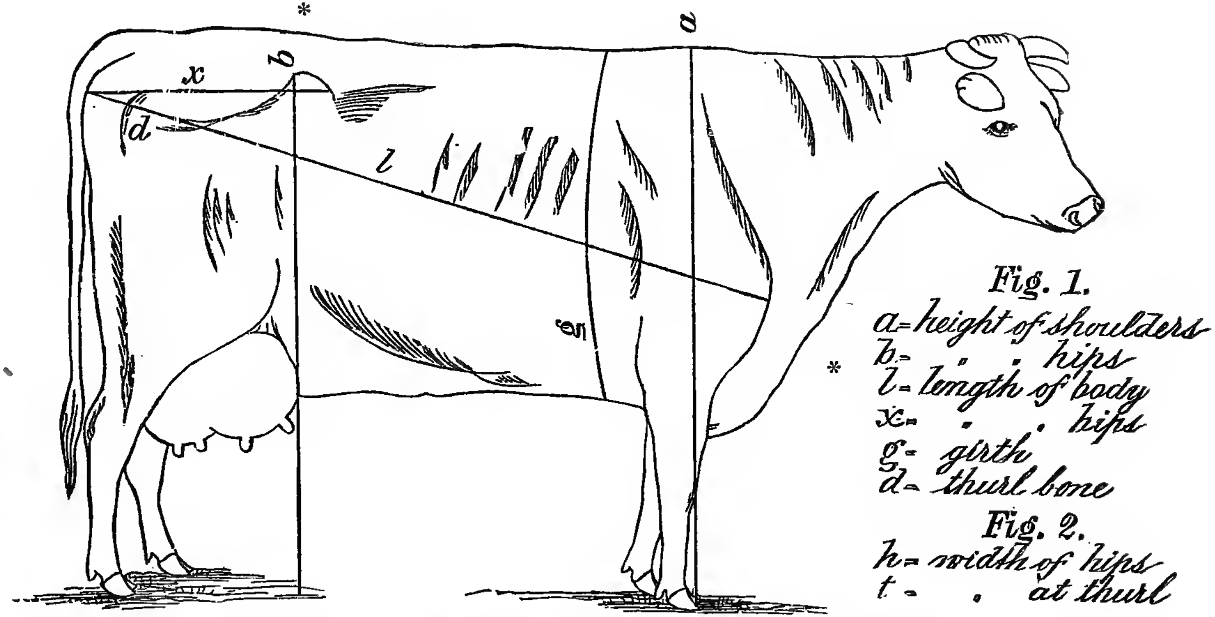


Diagram showing the various measurements described in Advanced Register.
All measurements are taken in straight lines excepting girth. The measurement "b" is to full height of the chine.

in explanation, or describe peculiarities not mentioned in the Nomenclature. He must take the measurements with much care (except in certain cases of bulls), not one of them must be left out. He must obtain the weight in every case where it is not exceedingly inconvenient to do so, and he should not fail to give the condition of flesh, and obtain the date of service if an animal is with calf. Nor does his responsibility end here. When the record or records of the animal are completed, and the application for its register is sent to him with the required affidavits attached, he must pass upon the capability of the animal to make such records. This is to be done upon his honor. If in his judgment the animal is not capable of making such records, he is to notify the owner within ten days; if in his judgment the animal is capable, he is to fill in the descriptive part, add the required dates, sign his name, and forward it to the superintendent without delay. The inspector must realize the weight of this responsibility. He acts for the association, not only for the present time but for its unlimited future.

NOMENCLATURE.

TERMS USED AND THEIR DEFINITIONS.

MILK-AND-BEEF FORM: This is the prevailing or average form of cows of this breed. It describes a cow of the wedge form, with shoulders moderately thick, moderately deep and broad, crops moderately well filled, barrel well rounded, loin and hips broad and full, and quarters straight, wide and full. (See plates.)

MILK FORM: This describes a cow of the wedge form, comparatively light in the shoulders and chest and comparatively light in the quarters. It is generally accompanied (though not always) with angularity of appearance.

BEEF-AND-MILK FORM: This describes a cow, the body of which, from a side view assumes the outlines of a parallelogram. Viewed from the front the lateral wedge form is moderately retained.

BEEF FORM: This describes a cow that gives no appearance of the wedge form viewed from side or front.

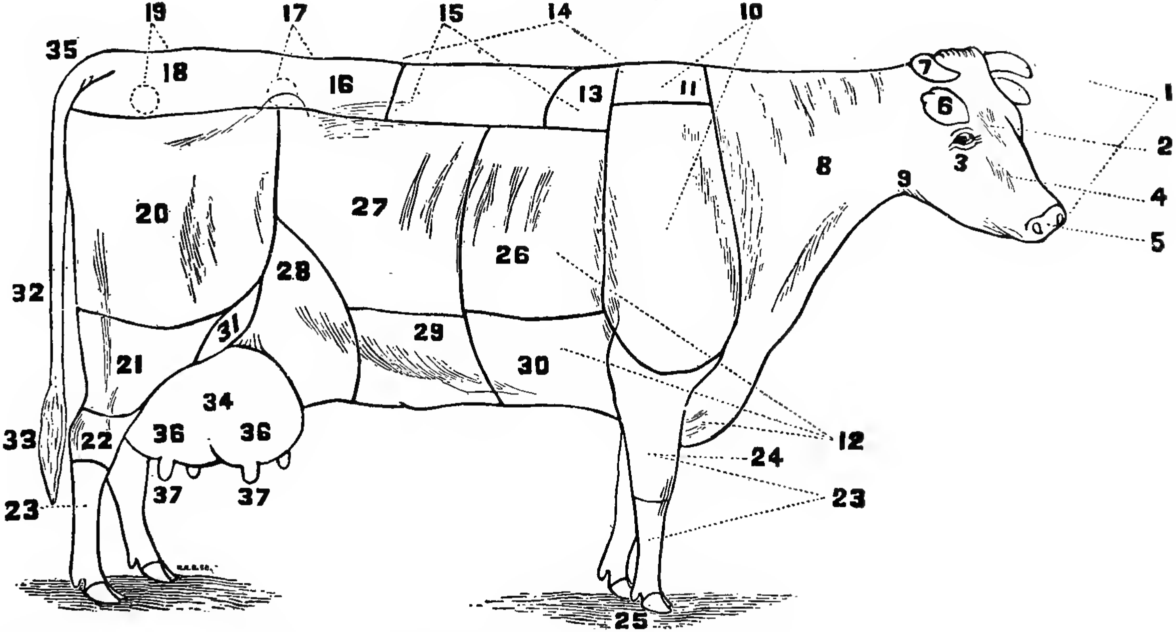
NOTE—In the milk and beef form there is a looseness of structure and greater length of barrel than in the beef-and-milk and beef forms.

HEAD, SIZE OF: As compared with body. The term proportionate indicates size in proportion to the body, the average size in the breed taken as a standard. The terms small, very small, large, and very large naturally follow, denoting different degrees above and below this standard.

HEAD, SYMMETRY OF: Symmetrical when of the average or general form. Very symmetrical when closely approaching the ideal type described in the Scale of Points. Unsymmetrical when departing to a marked degree from the average form. Special defects are noted.

NECK, SIZE AND LENGTH OF: Medium when averaging with the breed. The terms fine, very fine, heavy and very heavy, refer to size of neck. The terms above medium length, below medium length, long, short, etc., refer to length of neck.

FIG 3.

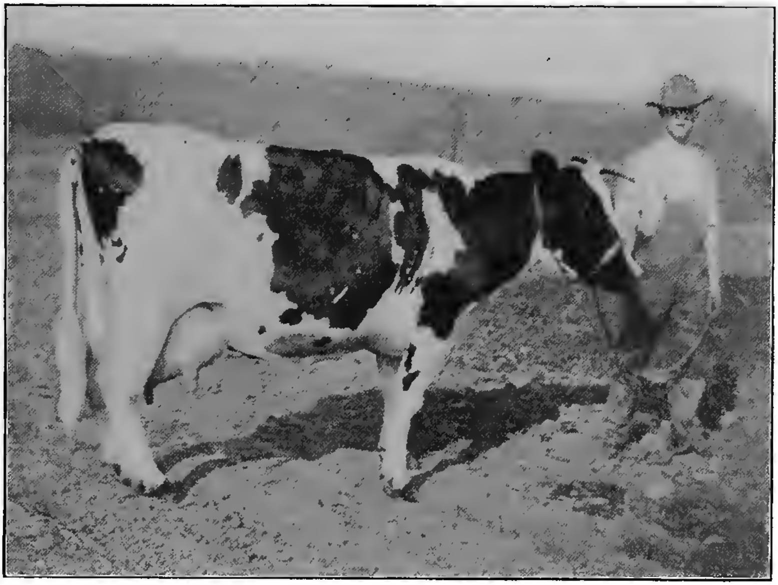


1.—Head. **2.**—Forehead. **3.**—Eye. **4.**—Face. **5.**—Muzzle. **6.**—Ear. **7.**—Horn. **8.**—Neck. **9.**—Throat. **10.**—Shoulder. **11.**—Shoulder tops. **12.**—Chest. **13.**—Crops. **14.**—Chine. **15.**—Back. **16.**—Loin. **17.**—Hip or Hook. **18.**—Rump. **19.**—Thurl. **20.**—Quarter. **21.**—Thigh. **22.**—Hock. **23.**—Leg. **24.**—Fore-arm. **25.**—Hoof. **26.**—Fore-ribs. **27.**—Back-ribs. **28.**—Flank. **29.**—Belly. **30.**—Fore-flank. **31.**—Stifle. **32.**—Tail. **33.**—Switch. **34.**—Udder. **35.**—Setting of Tail. **36, 36.**—Quarters of Udder. **37, 37.**—Teats.

Neck, Form and Bearing: Level when the neck is carried forward on a level or nearly on a level with top of shoulder. The term drooping describes the form popularly called "ewe neck." Slightly drooping describes the form between these two extremes.

Chine, Form of: Straightness or levelness of the top line. The term straight is used when there is no elevation or depression in the chine. Slightly uneven and uneven denote degrees of elevation at or near the middle of the chine. The terms slightly swayed and swayed are used when the general line is curved downward; the terms slightly roached and roached when the general line is curved upward.

Chine, Breadth of: This refers to the width of chine recognized by passing the hand over it. The terms broad, very broad, and fairly broad are obvious in meaning. The term single denotes a narrow or sharp chine.



JESSIE MAIDA 1686 A. R. O.

Official Records: Seven-day, 664.7 pounds milk, 24.811 pounds fat; thirty-day, 2,677.3 pounds milk, 100.987 pounds fat.

Note—In some cases the chine will be found exceedingly broad as the hand is passed over it, *with an apparent depression running along the middle line from shoulder to hips.* This is called a medial depression, and is regarded by some as an indication of very great vigor of constitution.

Chine, Space Between Vertebræ: By placing the hand upon the middle of the chine depressions between the vertebræ are easily felt. The size of these depressions is described by the terms close, fairly open, open, very open.

Loin and Hips, Strength of: As indicated by the levelness, width and fulness of the loin immediately forward of a line drawn between the hook bones. The terms, strong, very strong, fairly strong, moderately strong, and weak are used.

LOIN AND HIPS, LEVELNESS OF: As shown by placing a straight edge from one hook bone to the other. Level when the center of the back is perfectly level, or so nearly so that the top of each hook bone is not more than a half inch below a perfect level. The terms slightly rounded and rounded, indicate degrees of departure from the level.

RUMP, HEIGHT OF: As compared with the chine and hook bones. The term high describes the rump carried out on the same level, or nearly the same, with the hook bones. The terms fairly high, moderately high, low, and very low, indicate degrees below such level.

RUMP, CONTOUR OR TOP LINE: The term level is used when there is no unevenness or very little unevenness in such top line. Slightly uneven, and uneven indicate degrees of departure from such levelness. The terms slightly sloping, and sloping are also used, indicating degrees of steepness of the rump when such steepness is shown in a marked degree.

ESCUTCHEON, SIZE OF: The term largest indicates an extent of surface equal to that covered by a Flanders escutcheon of the first order. The terms very large, large, good or medium size, small and very small, indicate degrees of extent of surface below this.

ESCUTCHEON, QUALITY OF: The term finest indicates the quality found in the best class of escutcheons. Below this the terms very fine, fine, good or medium, fair, coarse, and very coarse, indicate degrees of quality below this.

UDDER, CAPACITY OF: The term very capacious describes the highest capacity, referring to a class within which there are limited variations. Below this the terms capacious, fairly capacious, and moderately capacious, describe different degrees of capacity.

UDDER, FLEXIBILITY OF: The term very flexible describes the highest flexibility, referring to a class within which there are limited variations. Below this the terms flexible, fairly flexible, moderately flexible, etc., denote different degrees of flexibility.

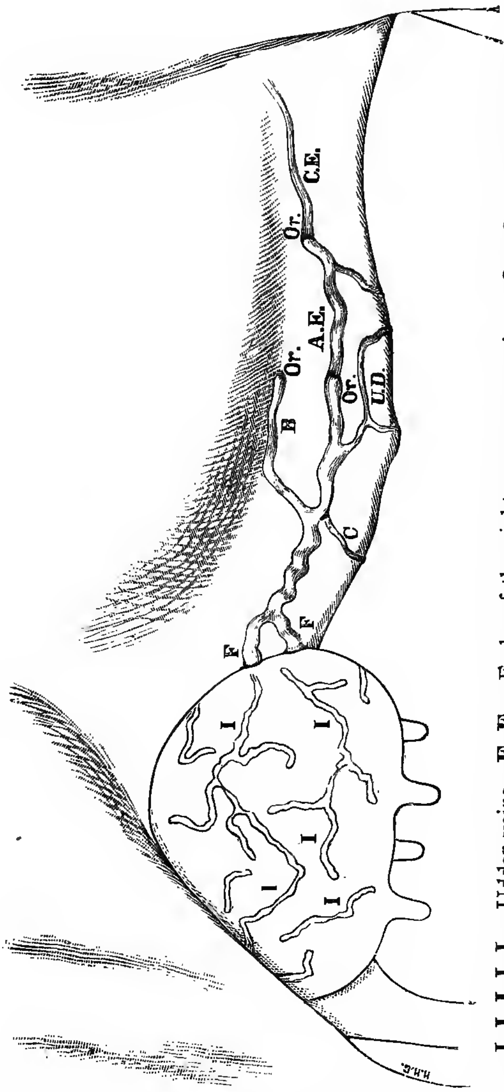
UDDER, QUARTERS OF: The term even describes an udder in which the quarters appear to be of equal capacity. (It is a difficult matter to be determined when a cow is dry or nearly so, and the inspectors are obliged to depend somewhat on the statements of owners and milkers.) Below this the terms slightly uneven and uneven, indicate degrees of departure from such equal capacity.

TEATS, SIZE AND FORM OF: The term perfect is used when teats appear as described in Scale of Points. Departures from this are indicated by the terms too large, too small, bell-shaped, cone-shaped, etc. (Inspectors must make allowances in case of young heifers, and not require the same showing of capacity of udder, or size of teats, as with older cows.)

HANDLING: This includes the thickness and quality of the skin, with the underlying tissues, and the denseness and quality of the overlying coat of hair. The average handling of the breed is described as medium or good. Above this three degrees are noted by the use of the terms superior, very superior, best. Below this the degrees in the opposite direction are noted by the use of the terms fair, inferior, and very inferior. Special defects should be reported.

SECRETIONS OF THE SKIN: These are more especially found on the escutcheon and in the ears. The terms abundant, very abundant, fairly abundant, and moderately abundant, are used to denote quantity; and the terms oily, very oily, and moderately oily, to denote quality. In some instances the color is also given.

MAMMARY VEINS AND UDDER.



I. I. I. I.—Udder veins. **F. F.**—Forks of the right mammary veins. **Or. Or. Or. Or.**—Orifices in which the mammary veins enter the abdomen on the way to the heart. **B.**—Branch vein. **A. E.**—Abdominal extension. **C. E.**—Chest extension. **U. D.**—Umbilical development of the mammary veins. **C.**—Connection between the two main veins.

General Appearance: In noting this three things are to be taken into consideration. First, the vigor of the animal: This is described by the use of the terms vigorous, very vigorous, and fairly or moderately vigorous. Second, the general fineness and symmetry. This is described by the terms fine, very fine, good, fair, etc. Third, the general style and bearing: This is described by the use of the terms, stylish, very stylish, good style, fair style, etc.

MAMMARY VEINS, LENGTH OF: The length of these veins is described by the use of the terms medium, long, short, very long, very short, etc.

MAMMARY VEINS, SIZE OF: The size is described by the use of the terms medium, large, very large, fair size or fairly large, moderate size or moderately large, etc.

NOTE—The mammary veins are never so fully developed on heifers as on older cows. Hence care should be had that they be described at their full value.

MAMMARY VEINS, CONTOUR OF: The contour is described by the use of the terms crooked or winding, very crooked, fairly crooked, nearly straight, and straight.

NOTE—Mammary veins often become varicose on aged cows. Care must be exercised that they be not valued too highly. Crookedness and size are evidences of past production rather than promises of the future. The size of the orifices through which these veins enter the body are indicative of the natural size of the veins and should be mainly depended upon in describing them.

MAMMARY VEINS, FURTHER TERMS: Further terms used in describing the mammary veins will be more clearly understood by referring to illustration. The veins are usually (not always) forked F. F. at the udder. As they pass on their way to the heart they enter the abdomen and chest by various orifices (Or. Or. Or.) that can be easily discovered. On some cows but two such veins and two such orifices are found, one on the right and the other on the left of the abdomen. In descriptions no mention is made of these, as all have these two veins and two orifices. On other cows and bulls there are two or more such orifices on each side showing the entrances of branch veins, and extensions of the main veins.

SINGLE EXTENSION: The more frequent of these is given the name abdominal extension, (A. E. from Or. to Or.). When this appears only on one side of the abdomen, attached to one vein, it is described as single extension.

DOUBLE EXTENSION: When such an extension appears on each side of the abdomen, that is, attached to both main veins, it is described as double extension.

SINGLE CHEST EXTENSION: In some cases, at the point where an abdominal extension enters the body, another extension, as it were, starts out, extending still further forward and disappearing without any apparent orifice under the muscles that cover the chest near the forward legs. This is described as a single chest expansion, (C. E. from Or. to end of vein).

DOUBLE CHEST EXTENSION: If such an extension is found on each of the main veins, that is, on both sides of the chest, it is described as a double chest extension.

SINGLE BRANCHED: Sometimes a branch (B.) starts from the main vein and enters a separate orifice. If such a branch appears only on one side of the abdomen, the veins are described as single branched.

DOUBLE BRANCHED: If a branch appears attached to each main vein, that is, on both sides of the abdomen, they are described as double branched.

NOTE—Sometimes several branches appear. All should be described.

UMBILICAL DEVELOPMENT: In rare cases the veins branch to the umbilicus and return again to the main vein. This is described as an umbilical development.

INDEPENDENT UMBILICAL VEIN: In still rarer cases a third vein apparently independent of the two main veins, extends along near the umbilicus, and enters the body by a separate orifice. This is called an independent umbilical vein. A connection between the two main veins is shown in the illustration (C.) referred to. This is also of rare occurrence. Its length and size of orifice should be described.

NOTE—The orifice through which the mammary veins enter the body should be described, *especially the size* of those by which the different forms enter.

UDDER DEVELOPMENT: If the udder appears with prominent veins on its surface it is described as an udder development.

NOTE—The main veins as they issue from the udder are proper subjects of descriptions.

MEASUREMENTS AND WEIGHT.

Seven measurements are given in this system, viz: Height at shoulders, height at hips, length of body, length of rump, width of hips, width at thurl bones, and girth. These measurements will be easily understood by referring to Figs. 1 and 2. The two measurements of height are taken perpendicularly, the length of body by a straight line diagonally from the shoulder point to the extremity of the rump, the two measurements of width by straight horizontal lines, and the girth by a line closely fitting to the animal at the smaller circumference of the chest. The weight is determined by the scales.

APPLICATION OF SCALE OF POINTS.

Many find it difficult to scale an animal twice alike. To aid such, the scale of points for Holstein-Friesian cattle is analyzed, as it were, and each distinct idea separated from others in the description of the parts of the animal. This is done by the use of the semi-colon. The amount of discredit that should be given is indicated in case of any defect, that all such work may be done with uniformity. A skillful man will thus scale closely to the same conclusions any number of times. In applying the scale in this manner the examiner begins with description given of the head. This includes two distinct requirements. He first gives his attention to *the vigor shown.* If this shows *very slight* (v. s.) deficiency he *discredits* ⅛ of a point as indicated, and *puts it down on the margin of the printed scale;* if the deficiency is better described by the term *slight* (s.) he discredits ¼ of a point; if by the term *marked* (m.), ½ of a point; if by the phrase *very marked* (v. m.) ¾ of a point; and if by *extreme* (e.), 1 point. He next gives his attention to the contour of the head and proceeds in the same way. Then he takes up the two particulars of *Forehead* in the same manner, discrediting at each step according to the instructions interlined. Thus going through the scale he at last foots up the discredits that he has made from point to point, and subtracts their total amount from 100 points, the standard of perfection. *The remainder is the number of points to be credited.*

This process may appear a very slow one to the reader, yet it is quite rapid to one who has practiced it to some considerable extent. It is the only method that will secure a high degree of uniformity of work by different inspectors located in different parts of our country. Doubtless improvements on this method can and will be made. The preparation of some system of scaling, as well as of uniform description, is really a work that properly belongs to the association of Agricultural Colleges and Experiment Stations.

SCALE OF POINTS

AND STRUCTURAL REQUIREMENTS

FOR BULLS.

[The interlines in smaller type relate entirely to the method of application agreed upon by the inspectors, in order to secure uniformity of work. The abbreviations are as follows: v. s., very slight; s., slight; m., marked; v. m., very marked; e., extreme.]

POINTS

Head—Showing full vigor; elegant in contour.......................... 2

Discredit v. s. ⅛—s. ¼—m. ½—v. m. ¾—e. 1.

Forehead—Broad between the eyes; dishing............................ 2

Discredit v. s. ⅛—s. ¼—m. ½—v. m. ¾—e. 1.

YBMA 3D'S PLEDGE CLOTHILDE 2791 A. R. O.

Official Records: Seven-day, 643.9 pounds milk, 24.302 pounds fat; thirty-day, 2,629.3 pounds milk, 97.073 pounds fat.

Face—Of medium length; clean and trim especially under the eyes, with bridge of the nose straight.. 2

Discredit s. ⅛—m. ¼—e. ½.

Muzzle—Broad; with strong lips.. 1

Discredit s. ⅛—m. ¼—e. ½.

Ears—Of medium size; of fine texture; the hair plentiful and soft; the secretions oily and abundant.. 1

Discredit m. ⅛—e. ¼.

Eyes—Large; full; mild; bright.. 2

Discredit s. ⅛—m. ¼—e. ½.

Horns—Short; of medium size at base; gradually diminishing toward tips; oval; inclining forward; moderately curved inward; of fine texture; in appearance waxy.. 1

Discredit m. ⅛—e. ¼.

Neck—Long; finely crested (if the animal is mature); fine and clean at juncture with the head; nearly free from dewlap; strongly and smoothly joined to shoulders Discredit v. s. ⅛—s. ¼—m. ½—v. m. ¾—e. 1.	5
Shoulders—Of medium height; of medium thickness, and smoothly rounded at tops; broad and full at sides; smooth over front Discredit v. s. ⅛—s. ¼—m. ½—v. m. ¾—e. 1.	4
Chest—Deep and low; well filled and smooth in the brisket; broad between the forearms; full in the foreflanks (or through at the heart) Discredit v. s. ¼—s. ½—m. 1—v. m. 1½—e. 2.	7
Crops—Comparatively full; nearly level with the shoulders Discredit v. s. ¼—s. ½—m. 1—v. m. 1½—e. 2.	4
Chine—Straight; broadly developed; open Discredit v. s. ⅛—s. ¼—m. ½—v. m. ¾—e. 1.	6
Barrel—Well rounded; with large abdomen; strongly and trimly held up, Discredit v. s. ¼—s. ½—m. 1—v. m. 1½—e. 2.	7
Loin and Hips—Broad; level or nearly level between hookbones; level and strong laterally; spreading from the chine broadly and nearly level; the hookbones fairly prominent Discredit v. s. ⅛—s. ¼—m. ½—v. m. ¾—e. 1.	7
Rump—Long; broad; high; nearly level laterally; comparatively full above the thurl Discredit v. s. ⅛—s. ¼—m. ½—v. m. ¾—e. 1.	7
Thurl—High; broad Discredit v. s. ¼—s. ½—m. 1—v. m. 1½—e. 2.	4
Quarters—Deep; broad; straight behind; wide and full at sides; open and well arched in the twist Discredit v. s. ⅛—s. ¼—m. ½—v. m. ¾—e. 1.	5
Flanks—Deep; full Discredit v. s. ⅛—s. ¼—m. ½—v. m. ¾—e. 1.	2
Legs—Comparatively short; clean and nearly straight; wide apart and firmly and squarely set under the body; arms wide, strong and tapering; feet of medium size, round, solid and deep Discredit v. s. ⅛—s. ¼—m. ½—v. m. ¾—e. 1.	5
Tail—Large at base, the setting well back; tapering finely to switch; the end of bone reaching to hocks or below; the switch full Discredit s. ⅛—m. ¼—e. ½.	2
Hair and Handling—Hair healthful in appearance; fine, soft and furry; skin of medium thickness and loose; mellow under the hand; the secretions oily, abundant and of a rich brown or yellow color Discredit v. s. ¼—s. ½—m. 1—v. m. 1½—e. 2.	10
Mammary Veins—Large; full; entering large orifices; double extension; with special developments, such as forks, branches, connections, etc. Discredit v. s. ¼—s. ½—m. 1—v. m. 1½—e. 2.	10
Rudimentary Teats—Large; well placed Discredit v. s. ⅛—s. ¼—m. ½—v. m. ¾—e. 1.	2
Escutcheon—Largest; finest Discredit s. ⅛—m. ¼—e. ½.	2
Perfection	100

General Vigor—For deficiency inspectors shall discredit from the total received, not to exceed eight points.

Discredit v. s. 1—s. 2—m. 3—v. m. 5—e. 8.

General symmetry and fineness—For deficiency inspectors shall discredit from the total received, not to exceed eight points.

Discredit v. s. 1—s. 2—m. 3—v. m. 5—e. 8.

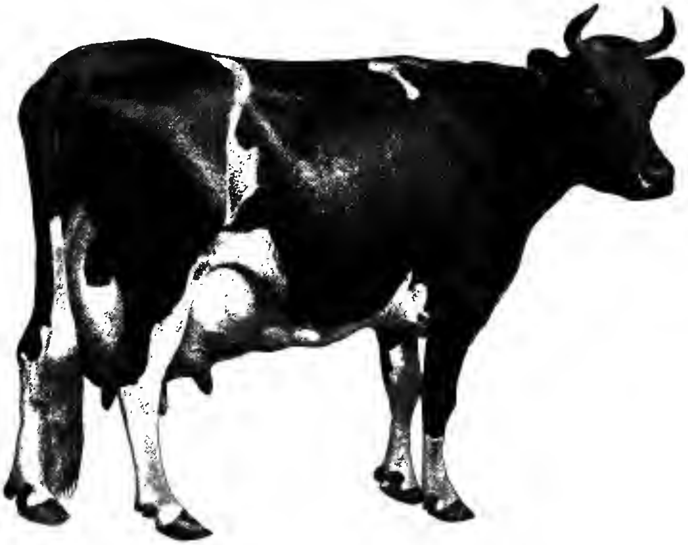
General style and bearing—For deficiency inspectors shall discredit from the total received, not to exceed eight points.

Discredit v. s. 1—s. 2—m. 3—v. m. 5—e. 8.

Credits for offspring—A bull shall be credited one point in excess of what he is otherwise entitled to, for each and every animal of which he is sire actually entered in the Advanced Register, not to exceed ten in number.

In scaling for the Advanced Register, defects caused solely by age, or by accident or by disease not hereditary, shall not be considered. But in scaling for the show-ring, such defects shall be considered and duly discredited.

A bull that in the judgment of the inspector will not reach at full age, and in good flesh, 1,800 pounds live weight and scale at least eighty points, shall be disqualified for entry, *with description,* in the Advanced Register.



VANDER LEI SUPERB 2D 4313 A. R. O.

Official Records: Seven-day, 669.8 pounds milk, 23.625 pounds fat; thirty-day, 2,852.6 pounds milk, 97.389 pounds fat.

FOR COWS.

POINTS

Head—Decidedly feminine in appearance; fine in contour 2

Discredit v. s. ⅛—s. ¼—m. ½—v. m. ¾—e. 1.

Forehead—Broad between the eyes; dishing 2

Discredit v. s. ⅛—s. ¼—m. ½—v. m. ¾—e. 1.

Face—Of medium length; clean and trim especially under the eyes, showing facial veins; the bridge of the nose straight; the muzzle broad........ 2

Discredit s. ⅛—m. ¼—e. ½.

Muzzle, broad with strong lips.. 1

Discredit m. ⅛—e. ¼.

Ears—Of medium size; of fine texture; the hair plentiful and soft; the secretions oily and abundant Discredit m. ⅛—e. ¼.	1
Eyes—Large; full; mild; bright Discredit s. ⅛—m. ¼—e. ½.	2
Horns—Small; tapering finely towards the tips; set moderately narrow at base; oval; inclining forward; well bent inward; of fine texture; in appearance waxy Discredit m. ⅛—e. ¼.	1
Neck—Long; fine and clean at juncture with the head; free from dewlap; evenly and smoothly joined to shoulders Discredit v. s. ⅛—s. ¼—m. ½—v. m. ¾—e. 1.	4
Shoulders—Slightly lower than hips; fine and even over tops; moderately broad and full at sides Discredit v. s. ⅛—s. ¼—m. ½—v. m. ¾—e. 1.	3
Chest—Of moderate depth and lowness; smooth and moderately full in the brisket, full in the foreflanks (or through the heart) Discredit v. s. ¼—s. ½—m. 1—v. m. 1½—e. 2.	6
Crops—Moderately full Discredit v. s. ¼—s. ½—m. 1—v. m. 1½—e. 2.	2
Chine—Straight; broadly developed; open Discredit v. s. ⅛—s. ¼—m. ½—v. m. ¾—e. 1.	6
Barrel—Of wedge shape; well rounded; with a large abdomen; trimly held up, (in judging the last item age must be considered)* Discredit v. s. ⅛—s. ¼—m. ½—v. m. ¾—e. 1.	7
Loin and Hips—Broad; level or nearly level between the hookbones; level and strong laterally; spreading from chine broadly and nearly level, with hookbones fairly prominent Discredit v. s. ⅛—s. ¼—m. ½—v. m. ¾—e. 1.	6
Rump—long and high; broad with roomy pelvis; nearly level laterally; comparatively full above the thurl Discredit v. s. ⅛—s. ¼—m. ½—v. m. ¾—e. 1.	6
Thurl—High; broad Discredit v. s. ¼—s. ½—m. 1—v. m. 1½—e. 2.	3
Quarters—Deep; straight behind; roomy in the twist; wide and moderately full at the sides Discredit v. s. ⅛—s. ¼—m. ½—v. m. ¾—e. 1.	4
Flanks—Deep; comparatively full Discredit v. s. ⅛—s. ¼—m. ½—v. m. ¾—e. 1.	2
Legs—Comparatively short; clean and nearly straight; wide apart and firmly and squarely set under the body; feet of medium size, round, solid and deep Discredit v. s. ⅛—s. ¼—m. ½—v. m. ¾—e. 1.	4
Tail—Large at base, the setting well back; tapering finely to switch; the end of the bone reaching to hocks or below; the switch full Discredit s. ⅛—m. ¼—e. ½.	2
Hair and Handling—Hair healthful in appearance; fine, soft and furry; the skin of medium thickness and loose; mellow under the hand; the secretions oily, abundant and of a rich brown or yellow color Discredit v. s. ¼—s. ½—m. 1—v. m. 1½—e. 2.	8

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*In old cows some allowance should he shown in view of the fact that bearing calves from year to year tends to weaken them in this matter.

Mammary Veins—Very large; very crooked (age must be taken into consideration in judging of size and crookedness); entering very large or numerous orifices; double extension; with special developments such as branches, connections, etc. 10

Discredit v. s. ¼—s. ½—m. 1—v. m. 1½—e. 2.

Udder—Very capacious; very flexible; quarters even; nearly filling the space in the rear below the twist, extending well forward in front; broad and well held up; teats well formed, wide apart, plumb and of convenient size. 12

Discredit v. s. ¼—s. ½—m. 1—v. m. 1½—e. 2.

Teats 2

Discredit s. ⅛—m. ¼—e. ½.

Escutcheon—Largest, finest 2

Discredit s. ⅛—m. ¼—e. ½.

Perfection 100

PONTIAC CALYPSO 3428 A. R. O.

Official Records: Seven-day, 560.3 pounds milk, 22.743 pounds fat; thirty-day, 2,393.4 pounds milk, 93.336 pounds fat.

General Vigor—For deficiency inspectors shall discredit from the total received not to exceed eight points.

Discredit v. s. 1—s. 2—m. 3—v. m. 5—e. 8.

General Symmetry and Fineness—For deficiency inspectors shall discredit from the total received not to exceed eight points.

Discredit v. s. 1—s. 2—m. 3—v. m. 5—e. 8.

General Style and Bearing—For deficiency inspectors shall discredit from the total received not to exceed eight points.

Discredit v. s. 1—s. 2—m. 3—v. m. 5—e. 8.

Credits for Excess of Requirement in Production—A cow shall be credited one point in excess of what she is otherwise entitled to, for each and every ten per cent that her butter fat record exceeds the minimum requirement of her class or age.

In scaling for the Advanced Register, defects caused solely by age, or by accident, or by disease not hereditary, shall not be considered. But in scaling for the show ring such defects shall be considered and duly discredited.

A cow that in the judgment of the inspector will not reach at full age in milking condition and ordinary flesh 1,000 pounds live weight, and scale at least seventy-five points, shall be disqualified for entry with description in the Advanced Register.